UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460
OFFICE OF CHEMICAL SAFETY AND POLLUTION PREVENTION
OFFICE OF PESTICIDE PROGRAMS REGISTRATION DIVISION (7505P)

FEE

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DP BARCODE No.: D463200; **FILE SYMBOL/REG. No.**: 35935-48; **PRODUCT NAME**: Lambda-cyhalothrin Technical; **DECISION No.**: 565237; **PC Code(s)**: 128897; **ACTION CODE**: R351; **FOOD Use**: Yes; **E-Sub #**: 54244

DATE: November 16, 2021

SUBJECT: Product Chemistry Review of "Lambda-cyhalothrin Technical"
In Response to Deficiencies Identified in the PCR of D459316 dated 4/30/2021

FROM: Dehui Duan, Ph.D. DDuan 11-23-2021
Product Chemistry Team, CITAB / RD (7505P)

THROUGH: Shyam Mathur, Ph.D. sbmathur 12-01-2021
Product Chemistry Team Leader, CITAB / RD (7505P)

TO: Robert Mitchell / Jacquelyn Herrick, PM 3
IVB1 / RD (7505P)

REGISTRANT: Nufarm Limited

MRID Number(s): 51588801, 51588802, 51192702, 47414805, 47414809

INTRODUCTION:

The registrant has submitted product chemistry data for the technical grade product "Lambda-cyhalothrin Technical" (EPA Reg. No. 35935-48) to address the deficiencies for guidelines 830.6313, 830.6314, 830.6317 and 830.7050 identified in the PCR of D459316 dated 4/30/2021. The relevant data were included in MRID Nos. 51588801, 51588802 and 51192702. CITAB has been asked to determine the acceptability of these new data which are used to support registration of Alternate Source #1 (Bharat Rasayan Limited, Mokhra Facility, Rohtak (Haryana), India).

The data package was first reviewed by Summitec Corporation.

SUMMARY OF FINDINGS:

1. Group A guidelines:

No data for Group A guidelines

2. Group B guidelines (physical-chemical properties):

Adequate data were submitted for guidelines 830.6313, 830.6314, 830.6317 and 830.7050. See the data table next page.

Table 2: Physical and Chemical Properties for "Lambda-Cyhalothrin Technical"				
GLN	Requirement	MRID	Status	Result or Deficiency
830.6313 830.6317	Stability to normal and elevated temperatures, metals, and metal ions	51192702 51588802	A	Product was found to be stable to metals of aluminum and iron at ambient temperatures (normal) and elevated temperature (54°C), and also stable to metal ions of aluminum acetate and iron (II) acetate at ambient temperatures (normal) and elevated temperature (54°C), for a period of 14 days.
830.6314	Oxidation/reduction: chemical incompatibility	47414805 51192702	A	Test was conducted with barium nitrate + powdered cellulose, which clearly indicated that it has no oxidizing properties. It was also found to be non-reactive towards monoammonium phosphate, potassium permanganate, zinc dust and water.
830.7050	UV/Visible absorption	47414809	A	Solvent / Concentration (mg/l) / λ_{max} (nm) / Absorbance / ε (dm³/mol/cm) Methanol/purified water (75:25 v/v): 10 / 206.3 / 0.989 / 44920; 100 / 265.0 sh / 0.561 / 2548; 100 / 271.3 sh / 0.634 / 2879; 100 / 277.6 / 0.709 / 3220 Methanol/0.1M HCl (75:25 v/v): 10 / 206.4 / 1.015 / 46100; 100 / 265.7 sh / 0.548 / 2489; 100 / 271.3 sh / 0.610 / 2770; 100 / 277.5 / 0.678 / 3079 Methanol/0.1M NaOH (75:25 v/v): 10 / 221.2 / 0.531 / 24120; 10 / 255.9 sh / 0.127 / 5768; 100 / 307.6 / 0.582 / 2643 Where, sh = shoulder
A = Acceptable; N = unacceptable (see Deficiency); N/A = Not Applicable; G = Data gap; I = In progress; U = Up-grade (additional information required); W = waivers				

CONCLUSIONS:

The CITAB has reviewed the supporting Group B data for Lambda-cyhalothrin Technical and has concluded that the product chemistry data for all Group B guidelines are acceptable.

830.1550. Product identity & composition: (MRID No. 51588802)

Common Name: Lambda-cyhalothrin

IUPAC Name: 1:1 Mixture of (R)-α-cyano-3-phenoxybenzyl (1S,3S)-3-[(Z)-2-chloro-3,3,3-trifluoropropenyl]-2,2-dimethylcyclopropanecarboxylate and (S)-α-cyano-3-phenoxybenzyl (1R,3R)-3-[(Z)-2-chloro-3,3,3-trifluoropropenyl]-2,2-dimethylcyclopropanecarboxylate

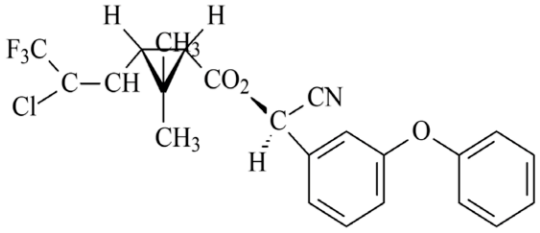
CAS Name: [1α(S*),3α(Z)]-(+)-cyano(3-phenoxyphenyl)methyl-3-(2-chloro-3,3,3-trifluoro-1-propenyl)-2,2-dimethylcyclopropanecarboxylate

CAS Number: 91465-08-6

Molecular formula: $C_{23}H_{19}ClF_3NO_3$

Molecular weight: 449.85 g/mol

Structural formula:



DATA EVALUATION RECORD

Lambda-cyhalothrin Technical

STUDY TYPE: PRODUCT CHEMISTRY REVIEW

OCSPP 830.6313, 830.6314, 830.6317, 830.7050

MRIDS 51588801, 51588802, 51192702

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Task Order No. Product Chem – 4-64b

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